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ABSTRACT

This pamphlet lists suggestions for conserving energy. The suggestions are intended for use by citizens. It includes tips on transportation practices emphasizing driving and purchasing an automobile, cooling and heating residential homes, use of home appliances, and preparing for a vacation. The energy saving tips are also aimed at saving money for the consumer. (MR)

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[COMMITTEE PRINT]

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INDIVIDUAL ACTION FOR ENERGY CONSERVATION

PREPARED BY THE
SUBCOMMITTEE ON ENERGY
OF THE
COMMITTEE ON SCIENCE AND ASTRONAUTICS
U.S. HOUSE OF REPRESENTATIVES
NINETY-THIRD CONGRESS
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(II)

LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND ASTRONAUTICS,
Washington, D.C., May 31, 1973.

HON. OLIN E. TEAGUE,
Chairman, Committee on Science and Astronautics, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: The Report of the Task Force on Energy of the Committee on Science and Astronautics stressed the importance of rational utilization of energy and the elimination of wasteful energy consumption. To further this goal, the Subcommittee on Energy has compiled a list of suggestions for actions that can be taken by each of us in our daily life to conserve energy. We do not suggest that following such practices will, by itself, solve the energy crisis that this nation faces nor reduce the need for a coordinated national energy policy with aggressive programs to carry it out, but we insist that prudent individual use of energy is an important step towards final resolution of this crisis.

I am pleased to transmit these suggestions for energy conservation to you for the use of the Members of the Committee on Science and Astronautics.

I would like to thank Mr. Kirk Hall of my staff, for the care and patience with which he compiled the background material for this report. I would also like to acknowledge the information obtained from "Concern, Inc.," and the editorial help afforded me by the Environmental Policy Division of the Library of Congress and by Dr. John Andelin, my Administrative Assistant.

Sincerely yours,

MIKE McCORMACK,
Chairman, Subcommittee on Energy.

(III)

INDIVIDUAL ACTION FOR ENERGY CONSERVATION

INTRODUCTION

Americans use more energy per capita than do the inhabitants of any other nation in the world. We use energy—or fuels to create energy—for almost every activity we pursue. Until recently we considered our energy supply to be unlimited. Today, however, we know this is not so, and we must reevaluate our own use of energy, conserving it and using it more effectively wherever possible.

This booklet is published to provide you with some suggestions you can follow to save money and use less energy. Many are common sense, but are often overlooked. This list is by no means complete, but it includes most of the measures that can be taken easily and immediately to conserve energy. Implementing these ideas will, in most cases, not only help alleviate the current energy crisis, but will also save you money.

(v)

INDIVIDUAL ACTION FOR ENERGY CONSERVATION

The use of energy for transportation and in homes accounts for 44 percent of our total energy consumption. Thus, by reducing personal energy consumption in these two areas, individuals like yourself can make an important contribution toward reducing the total U.S. energy consumption.

TABLE I

UNITED STATES ENERGY CONSUMPTION (1968 DATA)

13 percent for Commercial Uses	19 percent for Residential Uses
43 percent for Industrial Uses	25 percent for Transportation

TRANSPORTATION

As you can see from Table I, 25 percent of the nation's energy is used for transportation. Since most of this is consumed in private automobiles in the form of gasoline, it is clear that reducing the use of gasoline will have a significant impact in easing fuel shortages. Here are some actions you can take:

Walk, take public transportation, or ride a bike for short trips.

Learn the schedules and routings of public transportation. Use it whenever possible to get to work, school, or shopping. Reduce your dependence upon automobiles.

If public transportation does not meet your needs, encourage additional routing and scheduling.

Encourage development of bike trails in your community.

Consolidate small tasks requiring an automobile into one trip, and thus reduce your total automobile mileage.

Create and support car pools for transportation to work, school, or shopping.

DRIVING AN AUTOMOBILE

Keep your engine tuned at all times.

Keep your tires properly inflated; under-inflated tires decrease gas mileage.

After starting your engine, drive slowly for the first mile instead of warming the engine up while standing still.

Drive slower. Increasing the speed with which you drive greatly increases fuel consumption. Driving 70 miles per hour will increase the gasoline you use by 33 percent compared to driving 50 miles per hour, and 12 percent compared to driving 60 miles per hour.

Anticipate speed changes and, where possible, allow your car to slow down before applying the brakes. Excessive braking increases gas consumption.

Drive smoothly. Changes in speed wastes gasoline.

(1)

Do not race the engine. If the automobile idles poorly, it may indicate the need for a tune-up.

Do not idle your engine for over three minutes while waiting.

While driving at highway speeds, check to see if the air conditioner is necessary. If possible, drive with it off. (You will need your air conditioner less if you avoid driving during the hottest hours of the day.)

Set your air conditioner to the warmest level that is still comfortable.

PURCHASING AN AUTOMOBILE

When considering the purchase of an automobile, include fuel economy as a major consideration.

Purchase a car no larger or more powerful than you need. Try to eliminate unnecessary optional electrical features.

Remember that larger cars with more powerful engines consume more fuel than smaller ones, in direct proportion to their weights. (An automobile weighing 5,000 pounds uses over twice as much fuel as one weighing 2,000 pounds.)

Air conditioning units and automatic transmissions increase fuel consumption.

RESIDENTIAL

COOLING

Shade windows from direct sunlight. It is best to shade them from the outside with trees, shutters, awnings, or roof overhangs. Be sure that this exterior shading does not trap hot air. (Deciduous trees give shade in the summer, but when they lose their foliage in the winter, they provide direct sunlight to windows and aid in heating.)

If the windows cannot be protected from the outside from direct sunlight, use light colored opaque draperies inside. These should be kept closed when the window is exposed to direct sunlight. In this way, you will reduce solar heating of your house through windows by 50%.

If you cannot shade a window from the outside, and do not wish to cover it with draperies, consider installing heat absorbing or reflecting glass. (This can reduce heat entering a house through the windows by 70%.)

Leave storm windows on windows that are not going to be opened during the summer months. This will reduce the transfer of outdoor heat into the house. Even with storm windows in place, it is important to shade windows from direct sunlight.

Make sure that your house is properly sealed so that the amount of warm air that can enter the house from the outside will be minimized. This should be done by checking areas of the house that could be sources of leaks. Check seals on windows and doors. Check and seal cracks in roofs and floors. Seal all exterior cracks. Use weatherstripping.

Close the fireplace damper. (This is important. It keeps hot air out in the summer and cold air out in the winter.)

Increase the insulation between the house and the attic to six inches of insulating material.

Allow for the ventilation of air through the attic. Reduce heat build-up by opening vents or windows. Using a small fan to exhaust attic air is particularly helpful.

If you are going to repaint or reshingle the house, use a light color. (Dark surfaces can become as much as 60 degrees warmer than the surrounding air. Under the same circumstances, a light surface would only be 20 degrees warmer.)

During hot weather, try to reduce the use of electrical or gas appliances within the house. These appliances give off excess heat during operation, and add to the load of cooling the house.

If possible, construct exterior vents for major appliances such as stoves and clothes dryers. Any excess hot air that can be expelled into the outside will mean less that will have to be cooled inside.

Minimize the use of hot water in your home. Wash in warm or cool water. Do not waste hot water when showering or bathing.

Turn off the lights when not in use.

HEATING

Check your house for insulation. It has been estimated that 15 to 30% of the heat required to warm a house is lost due to poor insulation. Check the insulation of your house against the following chart:

Heating system	Ceilings (inches)	Walls (inches)
Electrical.....	9	3½
Gas or oil.....	6	3½

If your insulation does not measure up to these standards, your energy output for heating will be greater than is necessary.

Install storm doors and windows.

Check for leakage to the attic and outside.

If possible, replace large glass areas with insulating or double pane glass. Close draperies in the evening or during exceptionally cold periods to reduce the heat loss through the glass.

Close the damper of the fireplace when not in use. If the fireplace is no longer in operation, provide an airtight seal in the chimney.

Have the furnace checked once a year and change the filters frequently during use.

Lower the daytime setting of the thermostat. Lowering the thermostat setting by one degree results in a 3 to 4% drop in fuel consumption; by 5 degrees, 15 to 20% less fuel.

Lower the thermostat at night.

Close or reduce ventilation to rooms that are not in use or are used for limited periods.

HOME APPLIANCES

All appliances should be evaluated for their usefulness when compared to the energy they consume.

When purchasing new appliances, decide how much you will use optional extras—they require extra energy.

Air Conditioners

Check your requirements before you purchase. An air conditioner with too large or too small a capacity requires more energy and will often not work as well as an air conditioner matched to your needs.

Determine the efficiency of an air conditioner before purchase. To obtain the efficiency, divide the rating of the machine in BTU's per hour by the number of watts required to operate the machine. Models on sale today have efficiencies (defined above) ranging from 5 to 12. The higher the number, the more efficient the machine; the more efficient the machine, the less energy required for a given amount of cooling power.

Keep your air conditioning system clean and in good working order. Clean filters are required for the machine to work at its maximum efficiency. Check all filters every thirty days during use and if necessary replace them. Before use, check and lubricate the bearings as recommended in the manufacturer's manual. Check for proper tension and wear on all pulley belts.

Inspect the ducts in a central air conditioning system for blockage or leakage. The ducts should have a minimum of 1½ inches of insulation.

Gas Appliances

Since approximately 10% of all natural gas used in homes is consumed by pilot lights, consider switch operated electric starters instead of continuous burning pilot lights when purchasing new equipment.

Extinguish all pilot lights on appliances that will not be used for long periods of time. Make sure no gas is flowing.

Television Sets

Turn off television sets when not in use. (If yours has the "Instant-On" feature, unplug the set when not in use.)

Refrigerators and Freezers

Frost-free refrigerators require 50% more energy to operate than a standard model. Side-by-side refrigerator/freezer models use up to 45% more energy than conventional models.

Decide whether you need a full size freezer before purchase; it can add up to \$4 per month to your fuel cost. If you do use a freezer, keep in mind that a full freezer is more efficient than an empty one.

Washers and Dryers

When possible, wash dishes and clothes in warm or cold water. The water heater accounts for 15% of a home's utility bill.

If weather conditions are suitable, use outside clotheslines for drying clothes.

Check for dripping hot water faucets and fix if necessary. Such a leak wastes money, water and energy.

Set water heater to a lower temperature.

VACATIONS

In the months ahead, the energy crisis may reach many of us while we vacation. Even while on vacation, we should consider measures that conserve energy.

BEFORE YOU LEAVE

Make sure that all gas outlets in your home are closed before leaving. If there are any that you want working when you return, have a neighbor turn them on the day before you reach home.

Use a timer (or neighbor) to turn the lights on and off in the evening rather than leaving them on while you are gone.

If you vacation in the winter, set the thermostat at the lowest setting. (Turn your heating system off if there is no danger of freezing your water pipes.)

Turn off your water heater.

ON THE ROAD

While driving, remember to slow down to save gas.

Try to minimize the use of your automobile air conditioner. Make sure that it is cleaned and checked before leaving.

IF YOU HAVE A TRAILER OR CAMPER

Slow down. The speed at which you travel affects gas mileage even more than if you were in a passenger car.

Check propane or butane lines for leaks. Turn off all outlets during travel.

In the summer, choose sites for the trailer or camper that have natural shade. Open windows at night.

